

U.S. Serial No. 10/681,979 (Attorney Dkt: HALB:023D1)
Art Unit: 1712

REMARKS/ARGUMENTS

I. General Remarks

Please consider the application in view of the following remarks.

II. Disposition of Claims

Claims 13-20 and 26-41 are pending in this application. In this Response, claims 35, 39, and 41 have been canceled and claims 13, 26-28, 31-34, and 36-38 have been amended.

III. Allowable Subject Matter

Applicant acknowledges with appreciation that the Examiner has indicated that claim 34, a dependent claim, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, since claim 34 depended from independent claim 26 with no intervening claims, Applicant has herein amended claim 34 to include all of the limitations of claim 26. Applicant has also amended claims 27, 28, 31-33 (and indirectly claims 29 and 30) to depend from amended claim 34 instead of claim 26. Thus, claims 27 -33 are also believed to be allowable now as dependant on an allowable independent claim.

III. Rejection of Claims under 35 U.S.C. § 102(b)—Mueller; Walker; Reischneider; & WO 00/41480

The Examiner has rejected claims 38-41 as anticipated by four different and unrelated references and has rejected claim 13 as anticipated by two of these four references. The Examiner has rejected some other claims as anticipated by one of these four references.

A. Rejections Based on Mueller

More particularly, the Examiner has rejected claims 13-19, 35, 36, and 38-41 as anticipated by Mueller (6022833), stating:

Mueller teaches an invert emulsion fluid which comprises an ester as the continuous phase, a sorbitan monolaurate ester surfactant, a polyoxyethylene glycerolmonococoate surfactant, and calcium chloride as internal phase (see example 7). A fluid loss additive may also be present (see claim 19). Such would inherently possess micelles having a denser concentration in the palisade layer, than that of the emulsion containing either surfactant alone.

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Applicant respectfully traverses these rejections by the Examiner and respectfully submits that the disclosure in Mueller lacks the requisite identity of invention required for anticipation under 35 U.S.C. § 102. The law is well settled that “to anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Eg., Brown v. 3M*, 265 F.3d 1349, 60 USPQ2d 1375 (Fed. Cir. 2001); *Electro Med. Sys. S.A. v. Dooper Life Sciences*, 34 F.3d 1048, 1052, 32 U.S.P.Q.2d 1017, 1019 (Fed. Cir. 1994) (“anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention”). Anticipation requires identity of the invention. *Glaverbel Société Anonyme v. Northlake Marketing & Supply Inc.*, 45 F.3d 1550, 33 U.S.P.Q.2d 1496 (Fed. Cir. 1995).

Only Applicant teaches the importance of complimentary surfactants that interact and arrange in a staggered formation resulting in closer structural packing density, at least in the palisade layer, than is achievable with either surfactant alone. Further, only Applicant teaches that this staggered or complimentary arrangement is a key component in preparing an oil-based fluid that exhibits electrical conductivity over a broad temperature range. Still further, only Applicant teaches how this arrangement may be obtained in preparing the ECOM of the invention.

Mueller is concerned, in contrast, with a “composition of the free-flowing and pumpable water- and oil-based multicomponent mixture ensur[ing] that, under the particular in-use conditions, particularly in endangered rock formations within the well, the w/o invert mud is formed with the disperse aqueous phase in the continuous oil phase [whereas] [a]way from endangered rock formations and, above all, in the working up and elimination of cuttings covered with residues of fluid, phase reversal is possible to form a water-based o/w emulsion.”

Moreover, Applicant respectfully submits that the Examiner has failed to meet his burden as explained in MPEP § 2112 of providing: “a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teaching of the applied prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1467, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original).”

Given the contrasting teaching of preparation of the fluids of Applicant’s invention and of Mueller’s patent, Applicant respectfully submits that Applicant’s invention does not and cannot necessarily flow from Mueller’s disclosure.

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B. Rejections Based on Walker

The Examiner rejected claims 38-41 as anticipated by Walker (4464269) because:

Walker teaches an oil based well fluid which comprises a mixture of surfactants comprising a propoxylated alcohol, sorbitan monooleate and imidazoline (see example 5b). Such would inherently provide the specified electrical conductivity effects. Applicants intended use as a drilling fluid does not distinguish (*In re Pearson* 181 USPQ 641).

Applicant respectfully traverses these rejections and respectfully submits that the disclosure in Walker lacks the requisite identity of invention required for anticipation under 35 U.S.C. § 102. The law is well settled that “to anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Eg., Brown v. 3M*, 265 F.3d 1349, 60 USPQ2d 1375 (Fed. Cir. 2001); *Electro Med. Sys. S.A. v. Dooper Life Sciences*, 34 F.3d 1048, 1052, 32 U.S.P.Q.2d 1017, 1019 (Fed. Cir. 1994) (“anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention”). Anticipation requires identity of the invention. *Glaverbel Société Anonyme v. Northlake Marketing & Supply Inc.*, 45 F.3d 1550, 33 U.S.P.Q.2d 1496 (Fed. Cir. 1995).

Moreover, Applicant respectfully submits that the Examiner has failed to meet his burden as explained in MPEP § 2112 of providing: “a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teaching of the applied prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1467, 1464 (Bd. Pat. App. & Int. 1990)(emphasis in original).”

Walker teaches “a mixture of C₁₈ to C₃₂ linear and branched alkanols propoxylated to contain from 20 to 25 moles of propylene oxide per mole of alkanol” that is said to be “a superior mud dehydrating agent which can be readily formulated with an emulsifier-wetting agent, e.g. a polyol ester of a C₈ – C₂₂ fatty acid, and a hydrocarbon diluent to provide a superior additive for freeing ... stuck pipe by injecting a water-in-oil emulsion containing said formulation in the drilling fluid.” Applicant respectfully submits that, given this teaching in Walker, which cannot be ignored by the Examiner, Applicant’s invention does not and cannot necessarily flow from the Walker disclosure. The Walker fluid lacks utility as a drilling fluid and lacks complimentary surfactants that would arrange in an emulsion to impart electrical conductivity to the fluid.

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C. Rejections Based on Reifsneider

The Examiner rejected claims 13 and 38-41 as anticipated by Reifsneider (4729967), stating:

Reifsneider teaches a fluid which comprises acetone, sorbitan trioleate and polyoxyethylene sorbitan monolaurate. (See example 6). Such would inherently possess micelles having a denser concentration in the palisade layer, than that of the emulsion containing either surfactant alone, and the specified electrical conductivity effects. Applicants intended use as a drilling fluid does not distinguish (In re Pearson 181 USPQ 641).

Applicant respectfully traverses these rejections. Reifsneider is directed to pesticides that "are largely somewhat viscous oils, or, solids melting below about 100°C, which are rather readily soluble in many common organic solvents such as xylene or acetone or petroleum distillates and of very low solubility in water." Applicant respectfully submits that the disclosure in Reifsneider lacks the requisite identity of invention required for anticipation under 35 U.S.C. § 102. Moreover, Applicant respectfully submits that the Examiner has failed to meet his burden as explained in MPEP § 2112 of providing: "a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teaching of the applied prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1467, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original)."

D. Rejections Based on WO'480

The Examiner rejected claims 38-41 as anticipated by WO 00/41480. Applicant respectfully traverses the Examiner's rejections based on this WO '480 reference, for the reasons stated in Applicant's specification. Applicant discusses this reference on pages 1-2 of his specification and distinguishes it as follows:

Notwithstanding laboratory results reported in the WO/00/41480 publication, fluids based on traditional albeit monovalent or nonionic surfactant invert oil emulsions with electrically conductive properties imparted to them by conductive particle additives are still expected to possess traditional invert emulsion drilling fluid properties. Such fluids will not necessarily have the electrically conductive properties of a continuous aqueous phase. The dielectric (electrically insulating) properties of the oil will undoubtedly have an effect in the field on the conductivity of the particles, causing such fluids to display conductivity having dielectric or capacitance properties, which in turn can result in the detected logging current having a poor signal-to-noise ratio. Even where conductive properties seem favorable in lab tests, any source of multivalent cations in the actual wellbore, such as may be caused by lime or salt

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water flows in the field, can affect the conductive properties and result in a poor signal to noise ratio. Even without disruption of conductivity in the whole drilling fluid, filtrate that invades the formation may exhibit little or no conductivity.

IV. Rejection of Claims under 35 U.S.C. § 103—Mueller (6022833)

The Examiner rejected claims 13, 19, and 20 as obvious from Mueller (6022833) for the reasons stated above with respect to the Examiner's rejections based on this reference under 35 U.S.C. § 102. The Examiner noted that Mueller differs from Applicant's invention in teaching the specified fluid loss control additives of claim 20. However, the Examiner added that, "such additives, especially calcium carbonate are notoriously well known as fluid loss additives in well fluids, and thus use would be obvious"

Applicant respectfully traverses these rejections. Given the distinctions in the teachings by Applicant and in the teachings by Mueller as discussed above, the Examiner appears to be basing his rejections under 35 U.S.C. 103 in view of Mueller on some sort of a chemical theory, but the Examiner has not explained the theory or provided any evidence to support it as required by MPEP § 2144.02. That MPEP section provides that, while the rationale to support a rejection under 35 U.S.C. 103 may rely on logic and sound scientific principle, an examiner who relies on a scientific theory must provide evidentiary support for the existence and meaning of that theory.

The Examiner has not shown the general knowledge in the art and/or common practice on which he is basing his rejections. MPEP § 2144.03(A) provides that, "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." This section of the MPEP cites among other cases, *In re Eynde*, 480 F.2d 1364, 1370, 178 U.S.P.Q. 470, 474 (CCPA 1973), noting that the court rejected "the notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of such notice."

MPEP § 2144.03, citing *In re Zurko*, 258 F.3d 1379, 1385, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001), further explains: "[T]he Board cannot simply reach conclusions based on its own understanding or experience—or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings." Conclusory statements do not fulfill the Examiner's obligations and certainly

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mere reference to one example and one claim in Mueller is not enough to justify or explain the Examiner's rejections on grounds of obviousness. See *In re Lee*, 277 F.3d 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1434-35 (Fed. Cir. 2002).

Applicants respectfully submit that the teachings of Mueller fail to teach or suggest Applicants' invention as claimed.

V. Rejection of Claims under 35 U.S.C. § 103—Tadros (4875927)

The Examiner has rejected claims 13-16, 26-33, and 35-41 as obvious from Tadros (4875927), stating that "Tadros teaches an invert emulsion fluid which can comprise vegetable oils as the continuous phase (see column 2, lines 41-46)."

Applicants respectfully traverse these rejections and respectfully submit that the Examiner has improperly cited the Tadros reference as analogous prior art. For an examiner to rely on a reference under 35 U.S.C. 103, the MPEP dictates at § 2141.01(a) that, the reference "must be analogous prior art." According to the Federal Circuit, "Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Clay*, 966 F.2d 656, 659, 23 U.S.P.Q.2d 1058, 1060-61 (Fed. Cir. 1992), citing *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986); *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979).

The Tadros reference clearly is not "from the same field of endeavor" as Applicants' invention. Tadros is concerned with formulation of a herbicide for use in agriculture to spray upon unwanted plants. Applicant's invention concerns a drilling mud for use in the oil and gas industry to deliver performance of an invert emulsion drilling fluid in drilling boreholes in subterranean formations while also maintaining required electrical conductivity for use with resistivity-based logging tools for evaluation of the borehole and/or formation. The Tadros reference and Applicant's invention concern different industries, uses, and applications altogether. Tadros is not at all concerned with emulsions that may be used downhole, or with electrical conductivity. Rather, Tadros teaches that its disclosure relates to "methods of preparing herbicidal compositions comprising a multiple emulsion containing a bipyridylium diquatary salt as the active ingredient to reduce oral toxicity to humans found with conventional aqueous formulations."

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The Federal Circuit has stated that:

A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commanded itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.

In re Clay, 966 F.2d 656, 659, 23 U.S.P.Q.2d 1058, 1060-61 (Fed. Cir. 1992); also see *In re Oetiker*, 977 F.2d 1443, 1446, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992); MPEP § 2131.01(a).

The Federal Circuit has stated further that:

Patent examination is necessarily conducted by hindsight, with complete knowledge of the applicant's invention, and the courts have recognized the subjective aspects of determining whether an inventor would reasonably be motivated to go to the field in which the examiner found the reference, in order to solve the problem confronting the inventor. We have reminded ourselves and the PTO that it is necessary to consider 'the reality of the circumstances', *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) -- in other words, common sense -- in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.

In re Oetiker, 977 F.2d 1443, 1446, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992).

Applicants respectfully submit that the Examiner has not shown that a person of ordinary skill, seeking to solve a problem of providing oil-based muds suitable or compatible for use with resistivity imaging of a wellbore or subterranean formation, would reasonably be expected or motivated to look at herbicides. In the words of the Federal Circuit: "The combination of elements from nonanalogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself." *In re Oetiker*, 977 F.2d 1443, 1446, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992)(emphasis added), citing *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678-79, 7 USPQ2d 1315, 1318 (Fed. Cir. 1988); *In re Geiger*, 815 F.2d 686, 687,

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2 USPO2d 1276, 1278 (Fed. Cir. 1987); Interconnect Planning Corp. v. Fell, 774 F.2d 1132, 1147, 227 USPQ 543, 551 (Fed. Cir. 1985).

Applicant respectfully requests the Examiner reconsider his rejection of claims based on Tadros.

CONCLUSION

In response to the Examiner's Office Action, Applicant has reviewed the references cited by the Examiner and has prepared amendments to the claims. The amendments include elements that Applicant believes further emphasize and clarify the distinctiveness of Applicant's invention.

Applicant respectfully submits that the references cited by the Examiner lack the requisite identity with Applicant's invention to anticipate Applicant's claims. Further, Applicant respectfully submits that the references cited by the Examiner fail to render obvious Applicant's invention as claimed.

The Federal Circuit has dictated that the prior art must provide a motivation or reason for the worker in the art, without the benefit of the applicant's specification, to make the necessary changes to reach applicant's invention. *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992); *In re Deminski*, 296 F.2d 436, 230 U.S.P.Q. 313 (Fed. Cir. 1986); *accord, Ex parte Kranz*, 19 U.S.P.Q.2d 1216, 1218 (B.P.A.I. 1990). Applicant respectfully submits that the Examiner has failed to cite such motivation leading to Applicant's invention.

A basic issue is whether the applied references suggest the claimed invention as a solution to the specific problem solved by Applicant's invention. *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 221 U.S.P.Q. 481 (Fed. Cir. 1984). Focusing on the obviousness of substitutions and differences, as Applicant respectfully submits the Examiner has done here, instead of on the invention as a whole, is a legally improper way to simplify the difficult determination of obviousness. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 U.S.P.Q. 81, 93 (Fed. Cir. 1976). The Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 149 F.3d 1350, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Both the suggestion and the expectation of success must be founded in the

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prior art, not in Applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir., 1988). It is the invention as a whole that must be considered in obviousness determinations. The invention as a whole embraces the structure, its properties, and the problem it solves.

It is error to focus solely on the product created, rather than on the obviousness or non-obviousness of its creation. Thus, the question is whether what the inventor did would have been obvious to one of ordinary skill in the art attempting to solve the problem upon which the inventor was working. The problem solved by the invention is always relevant. **The entirety of a claimed invention, including the combination viewed as a whole, the elements thereof, and the properties and purpose of the invention, must be considered.** Factors, including unexpected results, new features, solution of a different problem, and novel properties, are all considerations in the determination of obviousness in terms of 35 U.S.C. § 103. . . . The requisite view of the whole invention mandates consideration of not only its structure but also its properties and the problem solved. Notwithstanding the fact that only old elements are used, the patentability of a new combination of old elements, that produces a result that is not suggested in the references, is of ancient authority. Virtually all inventions are combinations, and every invention is formed of old elements.

In re Wright, 848 F.2d 1216, 6 U.S.P.Q.2d 1959, 1961 (Fed. Cir. 1998) (emphasis added).

Each of the references that the Examiner cited is directed to a different problem as well as a different solution to the problem than is Applicants' invention. The references never suggest application of their teachings to preparing or obtaining an oil based drilling fluid that has utility not only as a drilling fluid in drilling wells, but also in facilitating resistance-based well logging of the well and/or subterranean formation. Further, the Federal Circuit has made clear that a reference is not available under 35 U.S.C. § 103 if it is not within the field of the inventor's endeavor and was not directly pertinent to the particular problem with which the inventor was involved. *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 226 U.S.P.Q. 402 (Fed. Cir. 1985).

Applicant respectfully requests the Examiner reconsider his position and Applicant's claims. Applicant respectfully submits that the claims as amended are now in condition for allowance and Applicant respectfully requests the Examiner to enter the amendments and to allow the application to proceed to issue

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Respectfully submitted,

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